

COILOPT Tasks (Strickler, 5/30/2001)

Engineering Constraints: ~ 1 week

- Add tangential access penalty function for nbi, diagnostics (NCSX) (2.)
- Add penalty function for distance between coils and PFC/VV surface (NCSX) (3)
- Include background coils in calculation of coil-coil separation penalty (4)
- Exercise COILOPT with new engr constraints on new configurations (5)

VF Coils:

- Implement VF coil position optimization
- Include VF coils in calculation of coil-coil distance penalty

Multifilament Optimization:

- Optimize on “twist” of coils, including interference between coils
- Implement symmetry coil options (NCSX)
- Model variable web thickness

STELLOPT/COILOPT merger:

- Generalize subroutine to write coils file for xgrid calculation
- Merge recent COILOPT changes (multifilament, etc.) with latest STELLOPT (1) (3 days)

Coil Optimization:

- Reproduce and improve selected coil configurations for $R = 1.4\text{m}$ (NCSX)
- Develop configurations with less complex winding surface (QPS & NCSX)
- Determine the effect of errors (symmetric/asymmetric)
- Optimize VF coils with respect to OH field errors (QPS)